



# STUDY ON NESTING PROPERTIES OF GREAT BLACK WASP (SPHEX PENNSYLVANICUS)

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## ABSTRACT

The Great Black Wasp are most often seen visiting flowers in open areas October through November. The present study focuses on aspects related to nesting of Great Black wasp such as shape, structure, size, material used, duration, season etc. Some different observation was seen about their period of activities.

**KEYWORDS:** Nest Structure, Food Habit, Sticky Material

## INTRODUCTION

Great Black Wasp belongs to class Insecta of Arthropoda, sub class pterygota (winged insect) Endopterygota, order Hymenoptera (wasp, bees, ants). This wasp is jet black in colour, even their hair is black but wings have gentle blue colour sheen. This wasp has no stripes or other marking unlike other wasps. Great black wasp is look-alike of Great Golden Wasps, however Great Black Wasp are much larger and darker. It also looks like an ordinary black and brown wasp except for a pair of large yellow eye like spots on its abdomen This wasp rarely stings and are not aggressive toward human. It only stings human when it is provoked or mis-handled. Nature of its stinging is defensive not predatory. Generally minor negative effect is seen by sting of this wasp. Localized pain and minor swelling is seen by its sting.

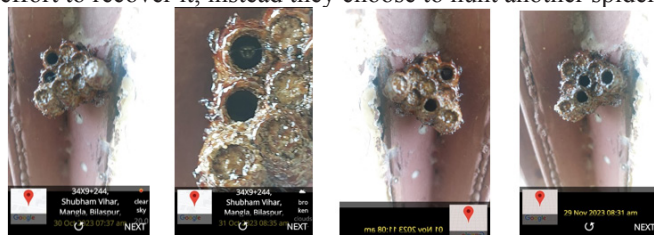
This black wasp is common and distributed widely throughout the country. This Wasp don't create big colonies like other species. Solitary is the nature of this Wasp, it likes to live individually. It is a type of digger wasp, mostly busily eating nectar and pollen from flower in winter time. Great Black wasp live underground, where they burrow their own nest. But what I observed is different, as location of nest made by wasp was not underground. Observation made my me was in the winter season.

## METHOD OF OBSERVATION

I monitored the observation site in two ways, I always paid attention to activity of site as I walk randomly by the site, the other method was to sit near the observation post for some time and see when wasp was more active. I noticed the presence of few wasps from first week of October. Frequency of their presence was getting more and more by each passing day. Their activity was more apparent in morning. On weekend of 1st week of October I saw a small patch of some sticky material cell like structure. It started to grew in a multicellular structure. Couple of few more wasps were active there. I started paying attention to activities of all the wasp from the day one. Nests of the wasps I chose to study were located near the garden of my house. Exact location of nest No.1 can be described as left

out space between door and door frame, which was made of V shaped iron angles. Nest No. 2 was located in front of nest No.1 on corner of the wall. It was about 8 feet away from nest 1. These wasps were black in color with blue reflection on wings. These wasps were small in size. The female wasp was slightly bigger than the male. It was relatively easy to tell the difference between male and female. The female Black wasp were 22 millimeters in length, while the male wasp was 20 millimeters in length only. It was seen that they first form two cell then three cell above

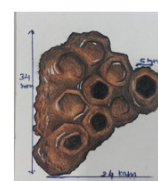
it, then four cell above previous cell. In Nest No. 1 total Nine cell were prepared. In nest No. 2 Five cells were made. Width or base of Nest 1 measured was 24 mm and length was 34 mm. Diameter of opening of each cell measured approximately 5 mm. Black Wasp seals each nests cell by a cap. It is made 2 mm inside cell opening. Great Black wasp took about 4 Minutes to cover one cell of nest. Depth of cell was found 15 mm. The shape of single cell looked like pitcher, narrow from outside and wide inside. Female Wasp layed eggs inside each cell of the nest. Male Wasp brought spider and put it inside each cells, if by chance any prey were drop outside cell, wasp did not make an effort to recover it, instead they choose to hunt another spider.



Time & Place stamped Photograph of Nest of Great Black Wasp



Great Black Wasp (*Sphex pensylvanicus*) sealing the nest after putting food for larvae



Dimensions of Nest of Great Black Wasp

## RESULT AND DISCUSSION

The black wasp makes its nest out of paper like substance (Wood fiber) that is chewed with their saliva. It also contains particle of mud Saliva imparts stickiness to it. Stickiness of its nest prevent other predator insect to come near the nest. It completes its nest formation in 20 days. After that female lays eggs, then male collects food for larvae, it approximately takes 60 days. Life cycle of this wasp starts from October and ends till January. By January the black wasps left their nest but the nest remained sticky till April. Wasps prepare their nests with mud, wax but in this case nest was very sticky. More work is needed to analyze the stickiness of its nest. Like other wasp this species undergoes complete metamorphosis through egg, larvae, Pupa and adult, but this is a solitary wasp it does not live in colonies. Female lays a single egg in single cell of the nest. Upon hatching the larvae eat the provisioned food then pupate and emerge as adult. Black wasp is friend to gardener and pollinates plant in the carrots and beans. Great Black Wasp should be protected.

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